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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/796,210

## Applicant(s)

CASSIERS ET AL.

## Examiner

LIN LIU

## Art Unit

2445

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11, 14-20, 22 and 23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 4-11, 14-20 and 22-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This office action is responsive to communications filed on 02/27/2009.

Claims 1-3, 5-10, 14-20 and 22-23 are pending and have been examined.

### *Response to Arguments*

2. Applicant's arguments, filed on 02/27/2009, with respect to 35 USC § 112 rejection have been fully considered and are persuasive. The rejection of 35 USC § 112 has been withdrawn.

3. Applicant's arguments with respect to claims 1-3, 5-10, 14-20 and 22-23 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 5-9, 18, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bornemisza et al. (USPAT: US 7,154,895 B1)** in view of **Agarwal (USPAT: US 6,963,570 B1)** and **Bourlas et al. (Patent no.: US 7,310,353 B1)**.

With respect to **claim 1**, Bornemisza teaches a transmitter unit for transmitting data via a data link (Bornemisza, fig. 2), said transmitter unit comprising:

a header compression unit adapted for converting a primary header of a data packet into a corresponding secondary header (Bornemisza, fig. 6a, col. 7, lines 29-65 and, col. 10, lines 35-53, noted the original ATM header is compressed into a compressed ATM header), with said primary header being related to said secondary header in one-to-one correspondence (Bornemisza, fig. 5a-5c, and col. 7, lines 29-65);

wherein said secondary header comprises a single byte that represents a compressed version of the primary header (Bornemisza: col. 7, lines 33-38, noted the encoded version), said single byte comprising an entry number for a header lookup table (Bornemisza: Tables 2& 3, and col. 9 line 55 to col. 10 line 25);

wherein said entry number corresponds to said entry comprising said primary header (Bornemisza: Tables 2& 3, and col. 9 line 55 to col. 10 line 25);

wherein said transmitter unit is adapted for transmitting a modified data packet via said data link, said modified data packet comprising said corresponding secondary header (Bornemisza, fig. 2, col. 9, lines 55-67, and col. 10, lines 35-61).

However, Bornemisza does not explicitly teach a method of searching a lookup table that includes an entry corresponding to a portion of a primary header; a method of replacing zeros within entry of a Payload Type Identifier of said primary header and a method of copying an unmodified Payload Type Identifier from one header to another.

In the same field of endeavor, Agarwal teaches a method of searching a lookup table that includes an entry corresponding to a portion of a primary header (Agarwal: col. 11, lines 4-40).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the method of searching a lookup table that includes an entry corresponding to a portion of a primary header as taught by Agarwal in Bornemisza's invention in order to efficiently index the lookup table.

In the same field of endeavor, Bourlas teaches a method of replacing zeros within entry of a Payload Type Identifier of said primary header (Bourlas: col. 8, lines 1-26, noted that PTI=0).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the method of replacing zeros within entry of a Payload Type Identifier of said primary header as taught by Bourlas in Bornemisza- Agarwal's invention in order to distinguish the first and last cells in transmission (Bourlas: col. 8, lines 23-26).

In the same field of endeavor, Bornemisza in another embodiment teaches a method of copying the original Payload Type Identifier from the primary header (Bornemisza: col. 6, lines 54-56: "noted that another non-limiting example for stateless compression provides that three bits may carry the original PTI bits.").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify different embodiments of Bornemisza's invention to include the features of copying the original PTI bits from the primary header to the modified version of the packet header with the motivation of spending the computing resource in modifying the PTI values and saving the computing resource for other tasks and rendering a resource efficient system.

With respect to **claim 2**, Bornemisza teaches the transmitter unit of claim 1, wherein said data packet is an ATM cell, and wherein said primary header is an ATM header (Bornemisza, fig. 5a-5c, and col. 10, lines 50-53).

With respect to **claim 3**, Bornemisza teaches the transmitter unit of claim 1, wherein said data link is part of an access network, in particular of an xDSL network (Bornemisza, title, abstract and, col. 10, lines 26-35).

With respect to **claim 5**, Bornemisza teaches the transmitter unit of claim 1, wherein the size of said secondary header is substantially smaller than the size of said primary header (Bornemisza, fig. 5A-5C, col. 5, lines 43-50, and col. 7, lines 29-60).

With respect to **claim 6**, Bornemisza teaches the transmitter unit of claim 1, wherein said header compression unit is adapted for converting said primary header in real-time (Bornemisza, fig. 6A-6B, and col. 10, lines 26-54).

With respect to **claim 7**, Bornemisza teaches the transmitter unit of claim 1, wherein said header compression unit is adapted for removing redundancy check bits that are part of said primary header (Bornemisza, fig. 6A, and col. 5, line 43 to col. 6, line 30).

With respect to **claim 8**, Bornemisza teaches the transmitter unit of claim 1, wherein said header compression unit is adapted for copying a predefined part of a bit sequence for said primary headers to said corresponding secondary header without any modification (Bornemisza, fig. 5A-5B, col. 7, lines 29-65).

With respect to **claim 9**, Bornemisza teaches the transmitter unit of claim 1, wherein said header compression unit is adapted for assigning, whenever a previously

unknown primary header is encountered for the first time, a secondary header to said primary header (Bornemisza, fig. 6A-6B, col. 10, lines 26-53).

With respect to **claim 18**, Bornemisza teaches the transmitter unit of claim 1, wherein said secondary header comprises extra bits that are used for transmitting control information (Bornemisza, col. 9, table 3, and col. 10, lines 19-25).

With respect to **claim 19**, Bornemisza teaches the transmitter unit of claim 1, wherein said secondary header comprises extra bits for accommodating count values required for transmitting said modified data packet in an inverse multiplexing mode (Bornemisza, col. 9, table 3, and col. 10, lines 19-25).

6. Claims 1, 5, 10-11, 14-17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Agarwal (USPAT: US 6,963,570 B1)** in view of **Bornemisza et al. (USPAT: US 7,154,895 B1)** and **Bourlas et al. (Patent no.: US 7,310,353 B1)**.

With respect to **claim 1**, Agarwal teaches a transmitter unit for transmitting data via a data link (Agarwal, fig. 2A), said transmitter unit comprising:

a header compression unit adapted for converting a primary header of a data packet to be transmitted into a corresponding secondary header (Agarwal, fig. 5A-5B, col. 11, lines 26-60), with said primary header being related to said secondary header in one-to-one correspondence (Agarwal, fig. 5A-5B, col. 11, lines 26-60);

wherein said header compression unit comprises at least one header lookup table that includes an entry corresponding to a portion of said primary header (Agarwal, fig. 6A, 8A, col. 11, lines 42-60 and col. 12, line 61 to col. 13 line 2),

wherein said secondary header comprises a single byte that represents a compressed version of the primary header (Agarwal: col. 12, lines 3-25), said a single byte comprising an entry number for said header lookup table (Agarwal: col. 12, lines 3-25);

wherein said entry number corresponds to said entry comprising said primary header (Agarwal: col. 12, lines 26-40);

wherein said transmitter unit is adapted for transmitting a modified data packet via said data link, said modified data packet comprising said corresponding secondary header (Agarwal, fig. 2A, 5A-5B, col. 7, lines, 19-64 and col. 11, lines 26-60).

However, Agarwal does not explicitly teach a method of replacing zeros within entry of a Payload Type Identifier of said primary header and copying an unmodified Payload Type Identifier from one header to another.

In the same field of endeavor, Bourlas teaches a method of replacing zeros within entry of a Payload Type Identifier of said primary header (Bourlas: col. 8, lines 1-26, noted that PTI=0).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the method of replacing zeros within entry of a Payload Type Identifier of said primary header as taught by Bourlas in Agarwal's invention in order to distinguish the first and last cells in transmission (Bourlas: col. 8, lines 23-26).



However, the combined method of Agarwal-Bourlas does not explicitly teach a method of replacing zeros within entry of a Payload Type Identifier of said primary header and copying an unmodified Payload Type Identifier from one header to another.

In the same field of endeavor, Bornemisza teaches a method of copying an unmodified Payload Type Identifier from one header to another (Bornemisza: col. 6, lines 54-56: "noted that another non-limiting example for stateless compression provides that three bits may carry the original PTI bits.").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the method of copying an unmodified Payload Type Identifier from one header to another as taught by Bornemisza the combined method of Agarwal-Bourlas' invention in order to save the computing resource for other tasks and creating a resource efficient system.

With respect to **claim 5**, Agarwal teaches the transmitter unit of claim 1, wherein the size of said secondary header is substantially smaller than the size of said primary header (Agarwal, fig., col. 11 lines 25-40).

With respect to **claim 10**, Agarwal teaches the transmitter unit of claim 1, wherein said lookup table is accessed for converting said primary header, or a part thereof, into said corresponding secondary header, or a part thereof (Agarwal, fig. 6A and fig. 8A, col. 11, lines 42-61).

With respect to **claim 11**, Agarwal teaches the transmitter unit of claim 10, wherein said header compression unit is adapted for creating, whenever said secondary

header is assigned to a previously unknown primary header, a corresponding entry in said lookup table (Agarwal, fig. 6A, col. 11, line 42 to col. 12, line 25).

With respect to **claim 14**, Agarwal teaches the transmitter unit of claim 10, wherein said header compression unit is adapted for searching said lookup table for an entry that matches with said primary header of said data packet to be transmitted, or with a part thereof, and for fetching, in case of a match, said corresponding secondary header, or a part thereof (Agarwal, col. 12, lines 4-25, col. 13, lines 4-19).

With respect to **claim 15**, Agarwal teaches the transmitter unit of claim 1, wherein said transmitter unit is adapted for transmitting update information packets via said data link, with said update information packets comprising update information for updating at least one lookup table on the part of a receiver unit (Agarwal, fig. 10A-10B, col. 14, lines 38-63).

With respect to **claim 16**, Agarwal teaches the transmitter unit of claim 15, wherein each time a new entry in said at least one lookup table is created, an update information packet comprising header information of said entry is transmitted (Agarwal, fig. 10A-10B, col. 14, lines 38-63).

With respect to **claim 17**, Agarwal teaches the transmitter unit of claim 15, wherein said update information comprises one or more secondary headers, or parts thereof, and for each of said secondary headers, a corresponding primary header said secondary header has been assigned to, or parts thereof.

With respect to **claim 20**, Agarwal teaches a receiver unit for receiving data transmitted via a data link (Agarwal, fig. 7, col. 12, lines 36-52, receiver interface), said receiver unit comprising:

a header decompression unit adapted for converting a secondary header of a modified data packet received via said data link into a corresponding primary header (Agarwal, fig. 7, lines 36-60), with said secondary header being related to said primary header in one-to-one correspondence (Agarwal, fig. 4-5, col. 10, lines 51-64, and col. 11, lines 26-40);

wherein said header decompression unit comprises at least one header lookup table that includes an entry corresponding to a portion of said primary header (Agarwal, fig. 6A, 8A, col. 11, lines 42-60 and col. 12, line 61 to col. 13 line 2),

wherein said secondary header comprises a single byte that represents a compressed version of the primary header, said single byte comprising an entry number for said header lookup table (Agarwal: col. 11 line 42 to col. 12, line 25).

However, Agarwal does not explicitly teach a method of replacing zeros within entry of a Payload Type Identifier of said primary header and copying an unmodified Payload Type Identifier from one header to another.

In the same field of endeavor, Bourlas teaches a method of replacing zeros within entry of a Payload Type Identifier of said primary header (Bourlas: col. 8, lines 1-26, noted that PTI=0).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the method of replacing zeros within entry of a

Payload Type Identifier of said primary header as taught by Bourlas in Agarwal's invention in order to distinguish the first and last cells in transmission (Bourlas: col. 8, lines 23-26).

In the same field of endeavor, Bornemisza teaches a method of copying an unmodified Payload Type Identifier from one header to another (Bornemisza: col. 6, lines 54-56: "noted that another non-limiting example for stateless compression provides that three bits may carry the original PTI bits.").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the method of copying an unmodified Payload Type Identifier from one header to another as taught by Bornemisza in Agarwal-Bourlas's invention in order to save the computing resource for other tasks and creating a resource efficient system.

7. Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Agarwal (USPAT: US 6,963,570 B1)** in view of **Bornemisza et al. (USPAT: US 7,154,895 B1)** and **Bourlas et al. (Patent no.: US 7,310,353 B1)** and further in view of **Rosengard (USPAT: US 6,760,345 B1)**.

With respect to **claim 22**, the combined method of Agarwal-Bourlas-Bornemisza teaches all the claimed limitations, except that they do not explicitly teach a method of performing a cell delineation by counting the bytes received by said receiver unit.

In the same field of endeavor, Rosengard teaches a method of performing cell delineation by counting the bytes received by said receiver unit (Rosengard, col. 10, lines 5-21, and col. 12, lines 9-40).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the method of performing cell delineation by counting the bytes received by said receiver unit as taught by Rosengard in Agarwal-Bourlas-Bornemisza's invention in order to efficiently reconstruct the compressed header (Rosengard, col. 12, lines 9-24).

In regard to **claim 23**, the limitations of this claim are substantially the same as those in claim 22. Therefore the same rationale for rejecting claim 22 is used to reject claim 23. By this rationale **claim 23** is rejected.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LIN LIU whose telephone number is (571)270-1447. The examiner can normally be reached on Monday - Friday, 7:30am - 5:00pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Srivastava Vivek can be reached on (571) 272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lin Liu/  
Examiner, Art Unit 2445

/VIVEK SRIVASTAVA/

Supervisory Patent Examiner, Art Unit 2445